

### Claims

1. (Previously Presented) Agricultural bale equipment comprising:  
a field position locator adapted to determine a location of the agricultural bale equipment in a field; and  
a controller adapted to control an operation of the agricultural bale equipment responsive to the location of the agricultural bale equipment in the field.
2. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a number of bales formed by the agricultural bale equipment.
3. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a size of bales formed by the agricultural bale equipment.
4. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a moisture content of bales formed by the agricultural bale equipment.
5. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a weight of bales formed by the agricultural bale equipment.
6. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a location of bales discharged in the field by the agricultural bale equipment.
7. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a distance traveled in the field by the agricultural bale equipment.
8. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a path traveled in the field by the agricultural bale equipment.

9. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a contour of the field traveled by the agricultural bale equipment.

10. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the controller controls the operation of the agricultural bale equipment by determining a size of the field traveled by the agricultural bale equipment.

11. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the field position locator further comprises:

a global positioning satellite (GPS) receiver adapted to receive a plurality of input signals, transmitted by a plurality of satellites located around the earth, representative of the location of the agricultural bale equipment in the field.

12. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the agricultural bale equipment further comprises a baler.

13. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the agricultural bale equipment further comprises a bale accumulator.

14. (Previously Presented) Agricultural bale equipment according to claim 13, wherein the agricultural bale equipment further comprises:

a base module including a load bed adapted to receive a plurality of bales along a bale receiving axis and adapted to accumulate thereon the plurality of bales,

wherein the controller controls the operation of the agricultural bale equipment by the controlling the receipt and accumulation of the plurality of bales on the load bed.

15. (Previously Presented) Agricultural bale equipment according to claim 14, wherein the agricultural bale equipment further comprises:

a bale transfer module adapted to transfer at least one bale of the plurality of bales across the load bed along a bale transfer axis horizontally transverse to the bale receiving axis responsive to the plurality of bales being received on the load bed,

wherein the controller controls the receipt and accumulation of the plurality of bales on the load bed by controlling the bale transfer module.

16. (Previously Presented) Agricultural bale equipment according to claim 14, wherein the agricultural bale equipment further comprises:

a bale stacking module adapted to form at least one stack of bales, including at least two bales of the plurality of bales, along a bale stacking axis vertically transverse to the bale receiving axis responsive to the plurality of bales being received on the load bed,

wherein the controller controls the receipt and accumulation of the plurality of bales on the load bed by controlling the bale stacking module.

17. (Previously Presented) Agricultural bale equipment according to claim 14, wherein the agricultural bale equipment further comprises:

a bale arrangement control module adapted to arrange at least one bale of the plurality of bales on the load bed responsive to the plurality of bales being received on the load bed,

wherein the controller controls the receipt and accumulation of the plurality of bales on the load bed by controlling the bale arrangement control module.

18. (Previously Presented) Agricultural bale equipment according to claim 14, wherein the agricultural bale equipment further comprises:

a bale stabilization module adapted to stabilize at least one bale of the plurality of bales accumulated on the load bed,

wherein the controller controls the receipt and accumulation of the plurality of bales on the load bed by controlling the bale stabilization module.

19. (Previously Presented) Agricultural bale equipment according to claim 14, wherein the agricultural bale equipment further comprises:

a bale advancement module adapted to advance at least one bale of the plurality of bales along the bale receiving axis onto the load bed,

wherein the controller controls the receipt and accumulation of the plurality of bales on the load bed by controlling the bale advancement module.

20. (Previously Presented) Agricultural bale equipment according to claim 13, wherein the agricultural bale equipment further comprises:

a bale discharge module adapted to discharge at least one bale of a plurality of bales accumulated on a load bed to a ground surface,

wherein the controller controls the operation of the agricultural bale equipment by the controlling the bale discharge module.

21. (Previously Presented) Agricultural bale equipment according to claim 20, wherein the agricultural bale equipment further comprises:

a permissive bale discharge module adapted to discharge at least one bale of the plurality of bales accumulated on the load bed from a bale receiving portion of the load bed to the ground surface,

wherein the controller controls the bale discharge module by controlling the permissive bale discharge module.

22. (Previously Presented) Agricultural bale equipment according to claim 20, wherein the agricultural bale equipment further comprises:

a selective bale discharge module adapted to selectively discharge at least one bale of the plurality of bales accumulated on the load bed from the load bed to the ground surface,

wherein the controller controls the bale discharge module by controlling the selective bale discharge module.

23. (Currently Amended) Agricultural bale equipment according to claim 20, wherein the agricultural bale equipment further comprises:

a bale advancement module adapted to advance at least one bale of the plurality of bales along the ~~a~~ bale receiving axis onto the load bed,

wherein the controller controls the bale discharge module by controlling the bale advancement module.

24. (Currently Amended) Agricultural bale equipment according to claim 20, wherein the agricultural bale equipment further comprises:

a bale speed control discharge module adapted to control a rate of speed at which at least one bale of the plurality of bales ~~are~~is discharged from the load bed to the ground surface,

wherein the controller controls the bale discharge module by controlling bale speed control discharge module.

25. (Previously Presented) Agricultural bale equipment according to claim 1, wherein the agricultural bale equipment further comprises:

a user interface module adapted to provide an interface between the agricultural bale equipment and a user,

wherein the controller controls the operation of the agricultural bale equipment by controlling the user interface module.

26. (Previously Presented) A method for operating agricultural bale equipment comprising the steps of:

- determining a location of the agricultural bale equipment located in a field; and
- controlling an operation of the agricultural bale equipment responsive to the location of the agricultural bale equipment in the field.

27. (Previously Presented) A method for operating agricultural bale equipment according to claim 26, wherein the step of determining the location of the agricultural bale equipment in the field further comprises the steps of:

- receiving a plurality of input signals transmitted by a plurality of satellites located around earth; and
- processing the plurality of input signals to determine the location of the agricultural bale equipment in the field.

28. (Previously Presented) A method for operating agricultural bale equipment according to claim 26, wherein the step of determining the location of the agricultural bale equipment in the field further comprises the steps of:

- receiving an initialization signal indicative of a starting location of the agricultural bale equipment in the field;
- receiving an input signal from a compass;
- determining a distance traveled by the agricultural bale equipment in the field; and
- processing the initialization signal, the input signal from the compass and the distance traveled by the agricultural bale equipment in the field to determine the location of the agricultural bale equipment in the field.

29. (Previously Presented) A method for operating agricultural bale equipment according to claim 26, wherein the step of controlling the operation of the agricultural bale equipment further comprises the step of:

- receiving and accumulating a plurality of bales by the agricultural bale equipment.

30. (Previously Presented) A method for operating agricultural bale equipment according to claim 26, wherein the step of controlling the operation of the agricultural bale equipment further comprises the step of:

discharging at least one bale of a plurality of bales by the agricultural bale equipment to a ground surface of the field.

31. (Previously Presented) A method for operating agricultural bale equipment according to claim 30, further comprising the steps of:

determining a present number of bales received and accumulated on the agricultural bale equipment;

determining whether the present number of bales received and accumulated on the agricultural bale equipment is equal to or less than a predetermined bale accumulating capacity of the agricultural bale equipment;

when it is determined that the present number of bales received and accumulated on the agricultural bale equipment is equal to the predetermined bale accumulating capacity of the agricultural bale equipment, then perform the step of:

determining whether the agricultural bale equipment is located in or has recently passed through at least one predetermined bale discharge zone located in the field (1135) responsive to the location of the agricultural bale equipment in the field;

when it is determined that the agricultural bale equipment is located in or has recently passed through the at least one predetermined bale discharge zone, then perform the step of:

discharging the present number of bales received and accumulated on the agricultural bale equipment to the ground surface in or near the at least one predetermined bale discharge zone;

when it is determined that the agricultural bale equipment is not located in or has not recently passed through the at least one predetermined bale discharge zone, then perform the steps of:

discharging some of the present number of bales received and accumulated on the agricultural bale equipment to the ground surface prior to reaching a next predetermined bale discharge zone to be reached by the agricultural bale equipment as the agricultural bale equipment travels a remaining distance from a present location of the agricultural bale equipment in the field to the next predetermined bale discharge zone responsive to the location of the agricultural bale equipment in the field and a location of the next predetermined bale discharge zone; and

continuing with the step of receiving and accumulating the plurality of bales on the agricultural bale equipment;

when it is determined that the present number of bales received and accumulated on the agricultural bale equipment is less than the predetermined bale accumulating capacity of the agricultural bale equipment, then perform the step of:

determining whether the agricultural bale equipment is located in or has recently passed through the at least one predetermined bale discharge zone;

when it is determined that the agricultural bale equipment is located in or has recently passed through the at least one predetermined bale discharge zone, then perform the step of:

discharging the present number of bales received and accumulated on the agricultural bale equipment from the agricultural bale equipment to the ground surface in or near the at least one predetermined bale discharge zone;

when it is determined that the agricultural bale equipment is not located in or has not recently passed through the at least one predetermined bale discharge zone, then continuing with the step of:

receiving and accumulating the plurality of bales on the agricultural bale equipment.

32. (Previously Presented) A method for operating agricultural bale equipment according to claim 31, further comprising the steps of:

determining a past distance traveled by the agricultural bale equipment in the field while the present number of bales were received and accumulated on the agricultural bale equipment; and

determining an average number of bales received and accumulated on the agricultural bale equipment over the past distance traveled by the agricultural bale equipment in the field responsive to the present number of bales received and accumulated on the agricultural bale equipment and the past distance traveled by the agricultural bale equipment in the field.

33. (Previously Presented) A method for operating agricultural bale equipment according to claim 32, wherein the step of discharging some of the present number of bales received and accumulated on the agricultural bale equipment to the ground surface prior to reaching the next predetermined bale discharge zone further comprises the steps of:

determining the remaining distance between the present location of the agricultural bale equipment in the field and the next predetermined bale discharge zone in the field to be reached by the agricultural bale equipment responsive to the location of the agricultural bale



equipment in the field and the location of the next predetermined bale discharge zone in the field;

estimating a future number of bales to be received and accumulated on the agricultural bale equipment over the remaining distance between the present location of the agricultural bale equipment in the field and the next predetermined bale discharge zone to be reached by the agricultural bale equipment responsive to the average number of bales received and accumulated on the agricultural bale equipment over the past distance traveled by the agricultural bale equipment in the field and the remaining distance between the present location of the agricultural bale equipment in the field and the next predetermined bale discharge zone; and

discharging the estimated future number of bales to be received and accumulated on the agricultural bale equipment from the load bed to a ground surface prior to reaching the next predetermined bale discharge zone as the agricultural bale equipment travels the remaining distance from the present location of the agricultural bale equipment in the field to the next predetermined bale discharge zone.

34. (Previously Presented) A method for operating agricultural bale equipment according to claim 31, further comprising the step of:

determining whether a future number of bales that the agricultural bale equipment can receive and accumulate before the agricultural bale equipment reaches the next predetermined bale discharge zone is greater than a remaining number of bales that the agricultural bale equipment can receive and accumulate before reaching the predetermined bale accumulating capacity of the agricultural bale equipment responsive to determining that the present number of bales received and accumulated on the agricultural bale equipment is less than the predetermined bale accumulating capacity of the agricultural bale equipment but prior to the step of discharging the present number of bales received and accumulated on the agricultural bale equipment from the agricultural bale equipment to the ground surface in or near the at least one predetermined bale discharge zone.

35. (Previously Presented) A method for operating agricultural bale equipment according to claim 34, wherein the step of determining whether the future number of bales that the agricultural bale equipment can receive and accumulate before the agricultural bale equipment reaches the next predetermined bale discharge zone is greater than the remaining number of bales that the agricultural bale equipment can receive and accumulate before

reaching the predetermined bale accumulating capacity of the agricultural bale equipment further comprises the steps of:

- subtracting the present number of bales received and accumulated on the agricultural bale equipment from the predetermined bale accumulating capacity of the agricultural bale equipment to determine the remaining number of bales that the agricultural bale equipment can receive and accumulate before the predetermined bale accumulating capacity of the agricultural bale equipment reaches its maximum limit;

- determining a remaining distance between a present location of the agricultural bale equipment in the field and the next predetermined bale discharge zone to be reached by the agricultural bale equipment;

- multiplying the average number of bales received and accumulated on the agricultural bale equipment over the distance traveled by the agricultural bale equipment in the field by the remaining distance between a present location of the agricultural bale equipment in the field and the next predetermined bale discharge zone to be reached by the agricultural bale equipment to determine the future number of bales that the agricultural bale equipment can receive and accumulate before the agricultural bale equipment reaches the next predetermined bale discharge zone;

- when it is determined that the future number of bales that the agricultural bale equipment can receive and accumulate before the agricultural bale equipment reaches the next predetermined bale discharge zone is greater than a remaining number of bales that the agricultural bale equipment can receive and accumulate before reaching the predetermined bale accumulating capacity of the agricultural bale equipment, then perform the step of:

  - discharging the present number of bales received and accumulated on the agricultural bale equipment from the agricultural bale equipment to the ground surface in or near the at least one predetermined bale discharge zone;

- when it is determined that the future number of bales that the agricultural bale equipment can receive and accumulate before the agricultural bale equipment reaches the next predetermined bale discharge zone is not greater than a remaining number of bales that the agricultural bale equipment can receive and accumulate before reaching the predetermined bale accumulating capacity of the agricultural bale equipment, then continuing to perform the step of:

  - receiving and accumulating the plurality of bales on the agricultural bale equipment.

36-60 (Withdrawn)